

CONCERNING THE STATUS OF *ISCHYRUS GRAPHICUS*
LACORDAIRE, WITH DESCRIPTIONS OF FOUR NEW
EROTYLID SPECIES FROM WESTERN NORTH AMERICA
(COLEOPTERA: EROTYLIDÆ)

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Ischyrus quadripunctatus quadripunctatus (Olivier) new combination

Erotylus quadripunctatus Olivier, 1791, Encyc. Meth. Hist. Nat. Ins. 6: 437.

Ischyrus quadripunctatus (Olivier) Lacordaire, 1842, Monographie des Erotyliens, p. 127.

Ischyrus quadripunctatus var. *A.* Lacordaire, loc. cit.

Ischyrus quadripunctatus var. *alabamæ* Schaeffer, 1931, Bull. Brooklyn Ent. Soc. 26: 175.

Ischyrus quadripunctatus a. *antedivisa* Mader, 1938, Ent. Blätter 34: 19.

The variability in color pattern of this eastern Nearctic subspecies is reflected in the synonymy above. The nominate form of Olivier has the black basal elytral fascia entire, the prosternum and pterothorax black, and the abdomen broadly black medially with the lateral fifths red. A variant form has the basal elytral fascia interrupted in the humeral areas by the reddish yellow ground color, leaving a short, elongate black spot lying laterad of each humeral callus but not attaining the lateral margin, and a large, quadrate black spot medially.

The color of the body below is sporadically variable. Occasional specimens from widely separated localities and belonging to either of the above forms or to their intermediates show a more or less extensive reduction of black underneath.

Lacordaire placed the nominate form in his genus *Ischyrus* as an originally included species. At the same time, he described the variant form with the basal elytral fascia interrupted as variety *A.*

Schaeffer described as variety *alabamæ* aberrant specimens of the nominate form with the body below largely red.

Mader rightly synonymized variety *alabamæ* Schaeffer with *quadripunctatus* Olivier and gave the name *antedivisa* to Lacordaire's variety *A*.

Examination of some 300 specimens from over the entire range of this complex (roughly North America east of the 100th meridian) reveals the following pattern of variation: Specimens taken from the Northeast north of approximately the 37th parallel approach 90 percent constancy in having the basal elytral fascia interrupted and are thus referable to variety *antedivisa* Mader. From localities south of the 37th parallel in the Atlantic States, however, specimens are about equally divided between those having the fascia interrupted and those having the fascia entire and with all degrees of intergradation generously represented. Of the 43 specimens I have examined from peninsular Florida approximately 80 percent have the basal elytral fascia entire, and so belong to *quadripunctatus* Olivier, *sensu stricto*.

In view of the immensity of the intergradation zone the north-south variation pattern appears to be essentially clinal in nature. Moreover, the clinal pattern disappears west of about the 85th meridian in the huge Mississippi drainage basin; specimens from this region are like those from the Atlantic intergrade zone in showing scant geographical correlation with color variation. This entire eastern North American population, therefore, is apparently at most in the stage of incipient (or vestigial) subspeciation, with foci of homogeneity in Florida and in the region embracing New York, Pennsylvania, and adjacent southern Quebec and Ontario.

Crotch (1873, *Cistula* Ent. 1: 144.) subsequently designated *Erotylus quadripunctatus* Olivier type of the genus *Ischyryus* Lacordaire.

RANGE: Eastern North America from Florida to southern Quebec and Ontario, New England excluded, west to approximately the 100th meridian, west of which it is not known to occur. The northern boundaries of the Texas Counties of Webb, Duval, Jim Wells, and Nueces and the Rio Grande River to the northwest form a

tentative line delimiting this subspecies from the one following.

Ischyryus quadripunctatus graphicus Lacordaire new combination

Ischyryus graphicus Lacordaire, 1842, Monographie des Erotyliens, p. 125.

The nominate populations of *Erotylus* (= *Ischyryus*) *quadripunctatus* Olivier from eastern North America and *Ischyryus graphicus* Lacordaire from Mexico are strikingly similar in both structure and color pattern. They differ, however, in the following respects: *quadripunctatus* has the head completely black, the pronotal apex immaculate, the prosternum entirely black and weakly compresso-carinate medio-apically, the pterothorax below completely black, and the abdomen broadly black medially and red only on the lateral fifths; *graphicus* has the disc of the head red, the pronotum with two small triangular black spots near the middle of the apical border, the prosternum apically red and strongly compresso-carinate medio-apically (produced into a small pitcher-like lip), and the abdominal black confined to the posterior borders of the four basal sternites but extending forward medially on each segment. Both forms exhibit variation in the black basal elytral fascia, this being sometimes entire and sometimes interrupted laterally so that a black spot is left in each humeral region but not touching the lateral elytral margin.

The similarities of the two forms have been noted by others. G. R. Crotch, who worked very capably on the world Erotylidæ during the latter half of the nineteenth century, repeatedly referred to *graphicus* as a possible race of *quadripunctatus*; yet he never synonymized the names. In his "Descriptions of Erotylidæ from Santo Domingo" (1873, Cistula Ent. 1: 144.) Crotch says of *graphicus*: "These, as well as the Mexican exponents of this species, appear to be a southern form of *I. quadripunctatus* with the head more or less rufous." Three years later (t. c., p. 427.) he again says of *graphicus*: "Closely allied to *I. 4-punctatus*, and may perhaps prove to be a red-headed southern form of it."

Material now at hand corroborates Crotch's observation. Specimens from Kingsville, Kleberg County, Texas, and from Weslaco,

Hidalgo County, Texas, exhibit intergradation between the two forms. These have the disc of the head red, the pronotal apex immaculate, the prosternum apically rufescent, and the abdomen with somewhat less black than that of *quadripunctatus*. A specimen from Rancho Presa Nueva, Nuevo León, Mexico, has the disc of the head red but is like *quadripunctatus*, otherwise. In addition to these, I have thirteen typical *graphicus* specimens—one from British Honduras and twelve from Costa Rica.

The two subspecies display an interesting size relationship. Taking the two forms together as a cline, specimens show a gradual increase in size from Central America northward to Quebec and Ontario (ostensibly in accordance with Bergmann's Rule). Bearing an inverse correlation to size is the strength of the prosternal carination; the smaller specimens from any given locality always have the prosternal apex more strongly carinate than the larger specimens.

The size range in terms of body length for the sixteen specimens of *graphicus* is 5.52-7.25 mm. (mean: 6.36). For sixteen specimens of *quadripunctatus* selected at random the range of length is 5.93-8.14 mm. (mean: 7.30). Paradoxically, two *graphicus* specimens from San José, Costa Rica, are the largest of the sixteen, while the other ten Costa Rican specimens (labelled simply "Costa Rica") are much smaller. If not attributable to nutritional differences, this anomaly may perhaps be explained by Bergmann's Rule, in accordance with which one would expect to find larger specimens of a given group at higher elevations or latitudes where temperatures are lower. If the two large specimens were taken in or near the city of San José, they were collected at an elevation of nearly 4000 feet; if taken not in the city but elsewhere in the province of San José, they may have come from a higher elevation. The three specimens from Texas and Nuevo León (which I assign to *graphicus*) are only slightly smaller than the two San José specimens. The data, however, are too few and the specimens too poorly distributed geographically to warrant strong conclusions regarding a size gradient in *graphicus*.

Lacordaire (1842, Monographie des Erytyliens, pp. 125-128.) also recognized the similarity of the two forms, as is evidenced by his

numbering *graphicus* 45 and *quadripunctatus* 48 in his serial arrangement designed to indicate similarities as much as possible. It is unfortunate, however, that he selected the carination of the prosternum as the basis for dividing the genus into subsections or species groups, for by this artificial division *graphicus* and *quadripunctatus* were placed in different subsections and considered different species.

The color of the disc of the head appears to be the most stable and geographically constant of the diagnostic characters separating the two populations. Thus *graphicus* may be recognized by the red spot on the head. Gorham (1887, Biol. Centr.-Amer. Insecta. Coleoptera. Vol. VII, pl. 2, fig. 17.) presents a rather good colored figure of *graphicus*. The two black denticles near the middle of the pronotal apex are too small to show clearly, however.

Measurements, in millimeters, of the 16 specimens available are as follows (the range is followed by the arithmetic mean in parentheses): length, 5.52-7.25 (6.36); width, 2.35-3.24 (2.89); width of pronotal base, 2.07-2.90 (2.51); median pronotal length, 1.17-1.61 (1.46); width at extremities of pronotal apical angles, 1.24-1.68 (1.50); width of head at eyes, 1.10-1.54 (1.37); interocular width of vertex, 0.58-0.85 (0.72); vertical diameter of eye, 0.49-0.62 (0.55).

RANGE: Extreme southern Texas south through eastern Mexico into Central America and possibly into northern South America. The northern boundary of this subspecies is not sharply determinable, but the intergrade zone does not appear to be wide. According to the available evidence, the northern borders of the Texas Counties of Webb, Duval, Jim Wells, and Nueces, along with the Rio Grande River northwestward form an approximately accurate demarcation.

Ischyrus chiasticus, n. sp.

This form appears to be a possible subspecies of *Ischyrus quadripunctatus* (Olivier), yet both in color pattern and in geographical range, so far as is known, it constitutes a distinct population. It is known from the mountains of southern Arizona and from the

Mexican State of Sinaloa (one specimen); thus it apparently ranges from southern Arizona into Mexico along the Sierra Madre Occidental for an unknown distance. Its closest relative, *I. quadripunctatus graphicus* Lacordaire, is found from extreme southern Texas south into Mexico (presumably along the Sierra Madre Oriental) and on into Central America. If intergrading populations of these two forms are eventually found, they will almost certainly occur in southern Mexico where the two cordilleras become confluent. The prairies and deserts of northern Mexico, western Texas, and southern New Mexico support few trees upon which grows the fungous food of these beetles.

DIAGNOSIS: Closely related to *I. quadripunctatus graphicus* Lacordaire but distinguishable from it and all other North American forms by a large, black, X-shaped spot occupying the basal third of the elytra (including the scutellum and basal margin of pronotum).

It seems best to describe this species in terms of a comparison of the type with the specimens of *I. q. graphicus* at my disposal and with *I. q. quadripunctatus*, the most common North American form.

DESCRIPTION OF TYPE: Resembles *graphicus* in gross color pattern of reddish yellow and black, and more specifically as follows: The disc of the head is red; the pronotum bears two small, black triangular spots medio-apically, four circular black spots in a transverse row across the disc, and a narrow black basal border; the elytra have black submedian and basal fasciæ; and the abdominal sternites are largely reddish yellow.

The differences, however, are numerous and striking. In size, *chiasticus* is considerably larger, the length and width of the type being 7.45 and 3.45 mm. respectively as compared with maximal measurements of 7.25 and 3.24 mm. of the sixteen *graphicus* specimens. (Note, however, that some overlap exists in the ranges of all measurements of the two groups of specimens.)

In color pattern *chiasticus* differs from both *q. graphicus* and *q. quadripunctatus* thus: The pronotal apex is narrowly bordered with black throughout its interocular extent; the basal elytral fascia is ruptured into three black spots—a large median one which is concave laterally and posteriorly, and a small comma-shaped spot filling the humeral angle of each elytron; thus, taken together, the three spots appear like the Greek letter *chi* or a fat 'X' enclosed in single quotation marks (whence the trivial name); the submedian elytral fascia is wider and more weakly undulate and extends more broadly along the suture to the apex; the narrow, black peripheral border of the elytra behind the submedian fascia suddenly increases to twice its width at

a point halfway or more to the apex; the black medio-apical vitta on each elytron is absent; the elytral epipleura are nigrescent before the submedian fascia; and the prosternum, mesosternum, and lateral thirds of metasternum are red, not black.

MEASUREMENTS OF TYPE (in mm.): length, 7.45; width, 3.45; width of pronotal base, 2.97; width at extremities of pronotal apical angles, 1.77; pronotal median length, 1.73; width of head at eyes, 1.61; interocular width of vertex, 0.87; vertical diameter of eye, 0.62.

TYPE: male, collected by E. S. Ross, July 1936 [California Academy of Sciences].

TYPE LOCALITY: Patagonia, Santa Cruz County, Arizona.

PARATYPES, 26, as follows: 5, Patagonia, Ariz., July 1936 (E. S. Ross); 1, Patagonia, Ariz., Aug. 2, 1924 (E. P. Van Duzee); 3, Nogales, Ariz., Sept. 8, 1906; 1, Pepper Sauce Canyon, Santa Catalina Mts., Ariz., Aug. 17, 1924 (J. O. Martin); 1, Paradise, Chiricahua Mts., Ariz., 5000-6000 ft., Aug. 22, 1927 (J. A. Kusche); 2, Washington Mts. [Mt. Washington?], near Nogales, Ariz., Sept. 7, 1927 (J. A. Kusche); 1, Elkhorn Ranch, east side, north end Baboquivari Mts., Ariz., July 28, 1952 (H. B. Leech and J. W. Green); 1, Brown's Canyon, Baboquivari Mts., Ariz., July 29, 1952 (H. B. Leech and J. W. Green); 4, the same, July 30, 1952; 1, Venedio [El Venadillo?], Sinaloa, Mexico [all in the Calif. Acad. Sci. Collection]; 5, Baboquivari Mts., Ariz., 1927 (O. C. Poling) [Cornell Univ.]; 1, Carr Canyon, Huachuca Mts., Ariz., June 6, 1930 [Univ. of Calif.].

In addition to the paratypes there are two specimens in the Fall Collection at the Museum of Comparative Zoology, Harvard College, from the Baboquivari Mts., Ariz., one dated June 15-30, 1923, the other Sept. 15-30, 1923.

VARIATION: The 27 specimens before me are quite uniform in color pattern and display no notable variations except perhaps in size. Measurement, in mm., of all specimens reveals the following variation (range followed by arithmetic mean in parentheses): length, 6.69-8.56 (7.56); width, 2.90-3.80 (3.37); width of pronotal base, 2.62-3.24 (2.96); median pronotal length, 1.54-1.89 (1.72);

width at extremities of pronotal apical angles, 1.56-1.84 (1.75); width of head at eyes, 1.40-1.68 (1.56); interocular width of vertex, 0.76-0.92 (0.86); vertical diameter of eye, 0.58-0.67 (0.61). No secondary sexual characters are evident. This appears true even of measurements; consequently both sexes are measured in one lot.

Ischyrys aleator, n. sp.

This unusual form becomes the fourth species of *Ischyrys* known to occur in America north of Mexico since Casey rightly restricted the genus by removing *Pseudischyrys* in 1916. A single male specimen is included in material kindly sent me by Mr. Hugh B. Leech from the collection of the late Dr. E. C. Van Dyke of the California Academy of Sciences.

DIAGNOSIS: Bearing scant similarity to any described form, it may be recognized by the following characteristics: Each elytron bears at the base between the scutellum and humeral callus an oval, flat, declivent area which lies in the plane of the pronotum and is skirted laterally by the base of a dark median elytral vitta. The strange coloration consists of a tawny ground color ornamented by three fusco-piceous elytral vittae and a similar dark framework on the median half of the pronotum surrounding a large tawny spot shaped like the emblem of the club suit in a deck of playing cards. The trivial name (*L.*, gambler) alludes to the latter characteristic.

DESCRIPTION OF TYPE: COLOR: tawny or light brownish yellow, the legs and thorax below a bit darker, the following fusco-piceous: antennal club, epistoma, the periphery of a large trefoil-shaped spot of the ground color occupying median third of pronotum, a common elytral vitta along the suture including the scutellum and narrowing to the apex, a wider lateral vitta along middle of each elytron largely limited to fifth and sixth intervals and not attaining elytral apex, the lateral elytral borders, and the elytral epipleura.

SHAPE: relatively depressed for an *Ischyrys*, length 2.3 times the width, elytral sides remarkably parallel, the body semicircularly rounded anteriorly, parabolically rounded in apical elytral three-eighths, surface of entire body and appendages with a minutely reticulate microsculpture.

HEAD: inserted in pronotum to middle of eyes; vertex moderately punctate, the punctures approximately equal to coarse ocular facets in diameter but smaller medio-basally; epistoma faintly margined along the strongly anteriorly convergent sides, apex slightly concave, disc twice as densely punctate as vertex with punctures half as large; antennæ as long as width of

pronotum at apical angles, the club dark, three-segmented, lax, its length 2.25 times width, segment nine equilateral-triangular, ten sublunate and wider than nine or eleven, eleven circular and one-third as wide as vertical diameter of eye, the stem tawny, more sparsely pubescent, segment three as long as four and five together; palpi a bit lighter in color than surrounding sclerites, terminal segment of maxillary palpus truncate-oval, its width equal to length of third antennal segment; mentum triangular, its basal width half again as great as median length which is equal to that of terminal segment of maxillary palpus, its disc with a small raised triangle basally which bears four or five setigerous punctures along each side.

PRONOTUM: weakly convex, strongly transverse, widest sub-basally, basal width almost twice median length; sides sharply margined, subparallel basally and strongly, arcuately convergent to the obtuse, slightly produced apical angles; apex shallowly concave and finely margined behind eyes, immarginate and transverse between eyes; base truncate, immarginate, with a moderately produced, evenly rounded lobe limited to median two-fifths; basal impressions moderately strong, bearing a few basal punctures larger and shallower than those on disc; discal punctures weak on median third, suddenly stronger and similar to those of vertex on lateral thirds, densest along lateral margins.

SCUTELLUM: subcordate, twice as wide as long, the base faintly, evenly concave.

ELYTRA: length about 1.75 times width; base immarginate, flattened on each side between scutellum and humeral callus; sides widest and perfectly parallel for one-half their length shortly behind base, parabolically rounded in apical three-eighths; each elytron bearing seven unimpressed striæ, the punctures of which are small, separated by two to three times their diameter, obsolescent apically; intervals moderately punctulate; setæ, as on head and pronotum, scarcely detectable.

THORAX BELOW: prothoracic venter scarcely punctulate, smooth save for a few short longitudinal furrows on prosternal process; prosternum faintly compressed, apically truncate, the process subquadrate, basally truncate, bounded laterally by weak ridges bent abruptly mesad beside anterior coxal edges; mesosternum subquadrate, smooth, weakly obtuse-angular behind; mesopleural sclerites lighter in color like abdomen, the mesepisternum only half as large as mesepimeron; metasternum with small, sparse punctures antero-laterally which become much weaker and denser medially and posteriorly, the setæ extremely tenuous but long; metepisternum vaguely lighter in color; metasternal coxal lines short, obsolescent.

ABDOMEN: punctulate like middle of metasternum, the punctules denser medially and apically, setæ of similar length but distinctly stronger than those of metasternum; four basal sternites with posterior borders narrowly darker in color; abdominal coxal lines raised, V-shaped, obsolescent.

MEASUREMENTS OF TYPE (in mm.): length, 5.80; width, 2.55; width of pronotal base, 2.30; median pronotal length, 1.20; width at extremities of pronotal apical angles, 1.43; width of head at eyes, 1.29; interocular width of vertex, 0.71; vertical diameter of eye, 0.51; width of terminal segment of maxillary palpus, 0.23.

TYPE: male, taken by J. A. Kusche on June 24, 1927 [Van Dyke Collection, California Academy of Sciences].

TYPE LOCALITY: Cave Creek (7000 ft.), Chiricahua Mts., Cochise County, Arizona.

PARATYPES: none.

VARIATION: This type of color pattern normally lends itself to some variation; thus the median, trefoil-shaped pronotal spot may be larger or smaller or assume a different shape. Secondary sexual characters are probably not present.

Mycotretus nigromaniscatus, n. sp.

A large New World genus, *Mycotretus* is rich in species throughout tropical America but has not previously been reported north of Mexico (excluding certain species erroneously assigned to it). The mountains of southern Arizona are apparently the northern extremity of the range of a number of Neotropical erotylids, e.g. *Hæmatochiton elateroides* Gorham, *Scæother carbonarius* Gorham, probably the present form, and perhaps others.

DIAGNOSIS: The closest relative of this species cannot be determined at the present time. The unusual five-jointed antennal club and unique color pattern—a bright reddish yellow body with black scutellum and appendages—clearly distinguish it from all published descriptions. It differs structurally from all erotylids north of Mexico except *Cypherotylus californicus* (Lacordaire) by having the pronotum entirely, finely margined. [The latter is a much larger black form with dirty-yellowish elytra (in life light purplish) bearing numerous black spots.] The trivial name (L., having long black sleeves) is suggested by the black appendages.

DESCRIPTION OF TYPE: COLOR: bright reddish yellow, the following black or piceous: eyes, antennæ, scutellum, and legs exclusive of coxæ and tarsi, the palpi and tarsi fusco-testaceous; the body nitidous, essentially glabrous.

SHAPE: elliptical, somewhat depressed; length 2.1 times width; widest point of body about one-third the elytral length behind base; sides evenly arcuate, slightly indented at elytral-pronotal base; ends of body equally, moderately parabolically rounded in anterior and posterior fifths.

HEAD: ocular striæ scarcely arched upward above eyes, extending over antennal bases; vertex moderately densely punctate, the punctures small and very shallowly impressed, suddenly deeper and sparser in a staggered row across the base; epistoma transversely hexagonal, immarginate, with the oblique latero-basal sutures piceous and unimpressed, the apex faintly angularly concave, the discal punctures denser but scarcely smaller than on vertex; eyes finely faceted, one-fifth wider than long; antennæ about one-sixth longer than pronotal width at apical angles, moderately robust; the club totally carbonarius, five-segmented, its length 2.5 times width, its segments more strongly punctate-asperate and densely pubescent than those of stem; segment seven triangular, one-third wider than the longitudinally obovate sixth; ten widest; eleven transversely elliptical, one-third wider than long, its width equal to that of nine and to length of eye; stem segments piceous, minutely alutaceous; segment three one-ninth shorter than four and five together; terminal segment of maxillary palpus transversely arcuate, its apex truncate and brushless, its width twice its length and one-fifth greater than length of eye; mentum transversely subrectangular, moderately large, with a dark amber margin except basally, one-third wider than long, its width one-tenth greater than length of terminal segment of maxillary palpus; genæ moderately punctate-pubescent behind, each bearing a deep, transversely arcuate indentation mesad of the hind inner angle of eye; postmandibular lobes (flanges of head capsule between eye and oral cavity) short, stout, sub-erect, scarcely half as long as eye, their anterior and lateral edges continuous in arcs which strongly converge anteriorly.

PRONOTUM: weakly convex, transversely sub-trapezoidal, entirely finely margined, faintly widest one-eighth before base, the basal width 1.67 times median length; sides evenly arcuate, moderately convergent to the obtuse, somewhat rounded, weakly produced apical angles, apex transverse between apical angles and with a darker, semi-translucent border; base equal in width to elytral base, the basal lobe moderately produced; basal impressions extremely weak but detectable, each bearing an uneven basal row of six or seven large punctures much larger than those of disc; punctuation similar to that of vertex, the punctures slightly stronger just beyond the middle of each side, becoming smaller and denser along extreme sides and a bit smaller and sparser medially; angle pores (large punctures at pronotal angles) small, simple, lying in vertical planes.

SCUTELLUM: black, one-half wider than long, base transverse; sides short, subparallel; postero-lateral edges straight, forming a sharp, slightly obtuse angle apically.

ELYTRA: approximately one-half longer than wide; bases margined, the submarginal striole interrupted by several irregularly spaced punctures; widest point one-third from base; sides rather evenly, weakly arcuate, the common apex parabolically rounded in the ultimate two-fifths; each elytron bearing seven unimpressed striæ plus a weak and basally incomplete eighth; stria punctures moderate, much stronger than those of pronotal disc, mostly separated by a little more than their diameters; intervals rather densely punctulate, the punctules closer together than stria punctures; setæ hardly detectable.

THORAX BELOW: prothoracic venter smooth, scarcely punctulate; prosternum apically truncate, weakly compressed, the process with four or five small punctures, limited laterally by straight ridges which extend along inner edges of coxæ and diverge a bit posteriorly to the shallowly concave base; mesosternum with median disc subquadrate, scarcely wider than long, smooth; mesopleural sclerites exhibiting strong, minutely reticulate microsculpture; metathorax smooth, with very sparse, minute punctules and setæ; metasternal coxal lines long, extending two-thirds the distance to metasternal lateral margins.

LEGS: piceous-black excepting coxæ and tarsi (of the forelegs only the coxæ and left trochanter are present); the coxæ narrowly separated, the middle ones separated by a distance equal to width of middle femora, the front and hind pairs by two-thirds as much.

ABDOMEN: almost glabrous and smooth but sparsely, minutely punctulate-pubescent; basal sternite with a small median patch of denser punctules and setæ; the punctules becoming a little stronger and denser apically, especially on apical half of ultimate sternite; abdominal coxal lines weak but distinct, forming straight-line continuations of inner edges of hind coxæ and extending obliquely backward more than halfway across basal sternite.

MEASUREMENTS OF TYPE (in mm.): length, 4.83; width, 2.30; width of pronotal base, 2.00; median pronotal length 1.20; width at extremities of pronotal apical angles, 1.27; width of head at eyes, 1.20; interocular width of vertex, 0.85; horizontal diameter of eye, 0.30; width of terminal segment of maxillary palpus, 0.36.

TYPE: male, collected by Witmer Stone, July 19, 1919 [Academy of Natural Sciences of Philadelphia Type no. 10701].

TYPE LOCALITY: Pinery Canyon (6000 ft.), Chiricahua Mts., Cochise County, Arizona.

PARATYPES: none.

VARIATION: The small patch of denser punctures and setæ on

the middle of the basal abdominal sternite may be a secondary sexual character of the male—such a phenomenon occurs in *Cypherotylus californicus* (Lacordaire).

Dacne cyclochilus, n. sp.

The late Dr. E. A. Schwarz of the U. S. National Museum recognized this form as an undescribed species; several specimens in different collections have been found bearing his manuscript name. It is, indeed, the most distinctive of the four unchallenged New World species, all of which occur in the United States.

DIAGNOSIS: closely related to *picea* Leconte from which it differs in several respects—in the elytral punctuation tending toward linear arrangement, in the more attenuate bodily form, and especially in the nature of the epistoma. The transversely elliptical epistoma, with its sides deflected, and the transverse, entire suture separating it from the frontal region between the antennal insertions serve to distinguish this species at once from the other American members of the genus.

DESCRIPTION OF TYPE: COLOR: dark reddish brown, somewhat piceous along the suture and elytral sides and on pterothorax below; moderately nitidous.

SHAPE: elongate-elliptical, narrow, rather depressed for a *Dacne*; length 2.33 times width, with widest point of body one-third the elytral length behind base; sides gently, evenly arcuate; the body semicircularly rounded in anterior twelfth, more tapering or parabolically rounded in posterior fourth.

HEAD: ocular striæ extending over antennal insertions; entire upper surface with a minutely reticulate microsculpture (the same present and equally strong on body below, less distinct on pronotum and elytra); vertex sparsely punctate, the punctures small, somewhat denser laterally; epistoma transversely elliptical (whence the trivial name: Gk., round lip), twice as wide as long, separated from frontal region by an entire, very fine but distinct suture, the sides strongly declivent, immarginate, somewhat rounded; epistomal punctures denser, not smaller than those of vertex, the setæ more distinct; antennæ about one-tenth longer than width of pronotum at apical angles, moderately robust, the club four-segmented, not very compact, its length twice the width; segment eight obconical or triangular and one-fifth wider than seven, hence belonging to club even though only half as wide as nine; segment eleven transversely elliptical, its width 0.85 the length of eye; stem with a few short yellow setæ; segment three one-fifth shorter than four and five together, five to seven moniliform, subequal in size; mentum strongly transverse, its width four times median length and equal to width of terminal antennal segment, its apex suddenly acuminate medially.

PRONOTUM: weakly convex, relatively depressed as in *picea*, transversely subrectangular, widest basally; basal width 1.58 times median length; sides straight and weakly convergent anteriorly in basal four-fifths, arcuately more strongly convergent in apical fifth; lateral marginal beads in lateral view scarcely increasing in thickness anteriorly (not strongly so as in *picea*); apical angles acute, not strongly produced, not quite equalled by the weakly convex and bilobed, immarginate apex when the four pronotal angles are in equal focus (resembling *picea* in this respect and differing from *californica* (Horn) and *quadrimaculata* (Say) in both of which the apex considerably surpasses the apical angles); base slightly narrower than elytral base, entirely, finely margined; basal lobe narrower and somewhat more strongly produced than apex; basal impressions absent; punctuation moderate, the punctures shallow, flat-bottomed but sharply incised, their diameters equal to about half the basal width of third antennal segment, mostly separated by once to twice their diameters, becoming slightly larger and considerably denser laterally; pubescence weak, the setæ only slightly exceeding the punctures.

SCUTELLUM: one-fourth wider than long, the sides moderately convergent anteriorly, apex arcuately rounded, disc rather densely punctulate.

ELYTRA: three-fourths longer than wide, widest one-third from base; sides equally, somewhat arcuately convergent anteriorly and posteriorly for one-third elytral length from widest point, the common apex sharply, parabolically rounded in the remaining third; elytral bases distinctly margined, the submarginal striae interrupted by several irregularly spaced punctures; elytral punctures small, their diameters about one-half those of pronotal punctures, likewise flat-bottomed and sharply incised, definitely tending to form straight rows, becoming obsolescent apically; striae and interval punctures forming alternating rows, the former a bit larger and partly underlain by piceous spots, setæ small, silvery, and decumbent but exceeding the punctures by perhaps half the diameter thereof; reflected light shows the first and second striae to be faintly impressed and the disc to be rugulose with fine transverse cracks between punctures.

THORAX BELOW: pronotal epipleura coarsely punctate, the epimeral area longitudinally rugose; prosternum likewise coarsely punctate with the punctures partially confluent in the episternal areas, evenly convex, the apex truncate, the process sparsely punctulate, limited laterally by low, arcuate ridges which do not extend cephalad of the coxae to form prosternal lines, strongly widening basally, the base weakly arcuately concave; setæ short, not exceeding punctures; mesosternum with median disc narrowest posteriorly, the width here about half again the median length, anteriorly weakly convex, moderately punctulate, the lateral wings more coarsely punctate-asperate; mesopleural sclerites scarcely punctate, strongly corrugated in microsculpture; metasternum coarsely punctate laterally, the punctures becoming smaller medially and obsolescent posteriorly, densest antero-medially;

the setæ distinct, exceeding punctures by as much as two to three times their diameters; metasternal coxal lines entirely absent; metepisterna coarsely punctate, the punctures partially confluent, the setæ shorter than on metasternum.

LEGS: of typical conformation for the genus but, like those of *picea*, less robust than in *californica* and *quadrifasciata*, the ratio of length to width of hind femora being nearer 3:1 than 2:1 as in the latter two species.

ABDOMEN: rather densely punctate, the punctures stronger latero-basally, becoming smaller medially and apically and much denser apically; setæ correspondingly dense, their size uniform and similar to that of metasternal setæ; abdominal coxal lines extremely short, raised, acuminate.

MEASUREMENTS OF TYPE (in mm.): length, 2.90; width, 1.24; width of pronotal base, 1.01; median pronotal length, 0.64; width at extremities of pronotal apical angles, 0.74; width of head at eyes, 0.67; interocular width of vertex, 0.48; horizontal diameter of eye, 0.18.

TYPE: female, taken by Hubbard and Schwarz on June 28 [U. S. National Museum Type no. 61978]. The female genital tube in this genus appears to show diagnostic specific characters, hence the selection of a female type.

TYPE LOCALITY: Alta, Salt Lake County, Utah.

PARATYPES, 174, as follows: 74, Alta, Utah, June 28 (Hubbard and Schwartz) [U. S. Nat. Mus.]; the following 16 also from Alta, Utah: 6 [Brooklyn Museum Collection, U. S. Nat. Mus.]; 4 [U. S. Nat. Mus.]; 4 [Hamilton Collection, Carnegie Mus.]; 1 [A. Fenyes Collection, Calif. Acad. Sci.]; 1 [R. Hopping Collection, Calif. Acad. Sci.]; 6, Brightons, Utah, July 18 (Hubbard and Schwarz) [U. S. Nat. Mus.]; 1, Logan Canyon, Utah, June 30, 1948 (S. L. Wood) [Utah State Agric. College]; 6, Salt Lake City, Utah, July 21 [H. Klages Collection, Carnegie Mus.]; 61, Utah, July 19 [U. S. Nat. Mus.]; 4, Mt. Shasta, Calif., 8000 ft., July 1914 [Blaisdell Collection, Calif. Acad. Sci.]; 6, Mt. Shasta, Calif., July 15, 1941 (W. B. Cook) [Calif. Acad. Sci.].

VARIATION: The entire transverse suture at the epistomal base is difficult to see in some specimens; careful orientation of the specimen to the light, however, always admits of its detection. The length ranges from 2.48 to 3.31 mm., and the color varies from yellow in the tenerals to piceous in the older specimens. No secondary sexual characters have been found.